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119 and L29	22

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<u>L32</u>	l9 and L29	42	<u>L32</u>
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<u>L30</u>	L29 and data same coherency	9	<u>L30</u>
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<u>L8</u>	((707/204)!.CCLS.)	540	<u>L8</u>
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L33: Entry 12 of 22

File: USPT

Jul 2, 2002

US-PAT-NO: 6415373

DOCUMENT-IDENTIFIER: US 6415373 B1

TITLE: Computer system and process for transferring multiple high bandwidth streams of data between multiple storage units and multiple applications in a scalable and reliable manner

DATE-ISSUED: July 2, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Peters; Eric C.	Carlisle	MA		
Rabinowitz; Stanley	Westford	MA		
Jacobs; Herbert R.	Hudson	NH		
Fasciano; Peter J.	Natick	MA		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Avid Technology, Inc.	Tewksbury	MA			02

APPL-NO: 09/ 006070 [PALM]

DATE FILED: January 12, 1998

INT-CL: [07] G06 F 12/00, G06 F 13/372

US-CL-ISSUED: 711/167; 711/114, 714/6, 709/233, 725/92, 725/93, 707/205

US-CL-CURRENT: 711/167; 707/205, 709/233, 711/114, 714/6, 725/92, 725/93

FIELD-OF-SEARCH: 709/102, 709/105, 709/104, 709/225, 709/226, 709/231, 709/232, 709/233, 709/240, 709/217, 709/219, 711/100, 711/112, 711/114, 711/133, 711/167, 711/162, 711/170, 714/6-8, 714/18, 348/7, 725/92, 725/97, 725/101, 707/104, 707/200, 707/201, 707/205

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

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0 701 198	March 1996	EP	
0 740 247	October 1996	EP	
2 299 424	October 1996	GB	
2 312 316	October 1997	GB	
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ART-UNIT: 2186

PRIMARY-EXAMINER: Kim; Matthew

ASSISTANT-EXAMINER: Bataille; Pirre-Michel

ABSTRACT:

Multiple applications request data from multiple storage units over a computer network. The data is divided into segments and each segment is distributed randomly on one of several storage units, independent of the storage units on which other segments of the media data are stored. At least one additional copy of each segment also is distributed randomly over the storage units, such that each segment is stored on at least two storage units. This random distribution of multiple copies of segments of data improves both scalability and reliability. When an application requests a selected segment of data, the request is processed by the storage unit with the shortest queue of requests. Random fluctuations in the load applied by multiple applications on multiple storage units are balanced nearly equally over all of the storage units. This combination of techniques results in a system which can transfer multiple, independent high-bandwidth streams of data in a scalable manner in both directions between multiple applications and multiple storage units.

5 Claims, 23 Drawing figures

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L33: Entry 22 of 22

File: USPT

Jan 4, 1994

US-PAT-NO: 5276867

DOCUMENT-IDENTIFIER: US 5276867 A

TITLE: Digital data storage system with improved data migration

DATE-ISSUED: January 4, 1994

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
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Wallace; John	Franklin	MA		
Webber; Neil	Hudson	MA		

ASSIGNEE-INFORMATION:

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APPL-NO: 07/ 454066 [PALM]

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FIELD-OF-SEARCH: 395/425, 395/600, 395/200, 395/575, 371/10.1

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected**Search ALL**

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<input type="checkbox"/>	<u>3806888</u>	April 1974	Brickman et al.	340/172
<input type="checkbox"/>	<u>4429363</u>	January 1984	Duke et al.	364/200
<input type="checkbox"/>	<u>4771375</u>	September 1988	Beglin et al.	395/425
<input type="checkbox"/>	<u>4934823</u>	June 1990	Okami	395/164
<input type="checkbox"/>	<u>5018060</u>	May 1991	Gelb et al.	395/600
<input type="checkbox"/>	<u>5089958</u>	February 1992	Horton et al.	395/575
<input type="checkbox"/>	<u>5133065</u>	July 1992	Cheffetz et al.	395/575

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
971285	July 1975	CA	354/239
0205965	December 1986	EP	

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ART-UNIT: 237

PRIMARY-EXAMINER: Kulik; Paul V.

ABSTRACT:

A digital data storage apparatus has primary, secondary and backing storage elements characterized by respectively longer access times. A level detector signals when the quantity of data in the secondary store exceeds a threshold amount. A data migrator responds by moving selected data files from the secondary store to the backing store. The apparatus also includes a baseline back-up element that stores archive copies of a set of selected data files. A full back-up element stores archive copies of those files that, (1) were originally copied to the baseline back-up set but have since changed, or (2) are not otherwise within the baseline back-up set. For those files which were originally copied to the baseline back-up set and which have not changed, the full back-up element stores pointers indicating locations of the respective files in the baseline back-up set.

35 Claims, 5 Drawing figures